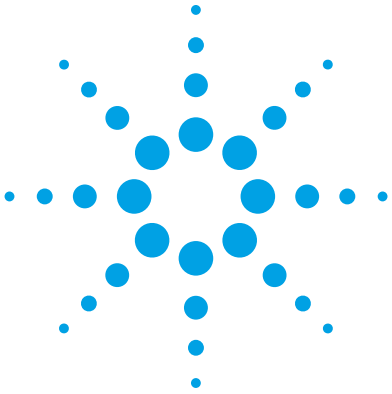

Agilent E4991B Impedance Analyzer

1 MHz to 500 M/1 G/3 GHz

Preliminary

Configuration Guide

Anticipate ___Accelerate ___Achieve

Agilent Technologies

Ordering Guide

The following steps will guide you through configuring your E4991B.

Standard Furnished Item

Description	Additional Information
Installation guide	Contains the information necessary to start up with the E4991B.
CD ROM IO libraries	
7-mm calibration kit with torque wrench	Contains Open, Short, 50 Ω Load and Low-loss Capacitor terminations and torque wrench.
Power Cable	
Certificate of Calibration	

Note: The following are not furnished: Printed copy of Operation and Service Manual, Test Fixture, Keyboard and Mouse. Refer to Accessory Option, Documentation Option and Available Accessories for the selection of these items.

Step 1. Choose Hardware Option - Frequency (Mandatory)

Description	Option No.	Requires	Not Compatible	Additional Information
1 MHz to 3 GHz	E4991B-300	None	None	
1 MHz to 1 GHz	E4991B-100	None	None	
1 MHz to 500 MHz	E4991B-050	None	None	

Step 2. Choose Hardware Option – Frequency Reference If not required, go to Step 3)

Description	Option No.	Requires	Not Compatible	Additional Information
High Stability Frequency Reference	E4991B-1E5	None	None	Adds High Stability Frequency Reference.

Note: Refer to Hardware Upgrade for retrofit information on the above options.

Step 3. Choose Hardware Option – DC bias (If not required, go to Step 4)

Description	Option No.	Requires	Not Compatible	Additional Information
DC Bias Source	E4991B-001	None	None	Adds DC Bias Source.

Note: Refer to Hardware Upgrade for retrofit information on the above options..

Step 4. Choose Software Option (If not required, go to Step 5)

Description	Option No.	Requires	Not Compatible	Additional Information
Material Measurement Firmware	E4991B-002	None	None	Adds Material Measurement Firmware for permittivity and permeability measurements. This option is required to use the 16453A and 16454A.

Note: Refer to Software Upgrade for retrofit information on the above options.

Step 5. Choose Accessory Option – Test Kit (If not required, go to step 6)

Description	Option No.	Requires	Not Compatible	Additional Information
Temperature Characteristic Test Kit	E4991B-007	None (The 16194A and 82357B are recommended)	None	Adds Temperature Characteristic Test Kit. The kit contains heat-resistant coaxial cable, RF extension cable, heat-resistant coaxial termination set, test head stand, fixture stand, and terminal adapters. Sample program for temperature characteristics measurement is installed on SSD.
Probe Station Connection Kit	E4991B-010	None	None	Adds Probe Station Connection Kit. The kit contains test head with 1 m extension cable and terminal adapters, which are required to interconnect the E4991B and semiconductor probe station.

Note: Refer to Hardware Upgrade for retrofit information on the above options.

Step 6. Choose Accessory Option - General/Miscellaneous Accessories (If not required, go to step 7)

Description	Option No.	Requires	Not Compatible	Additional Information
Keyboard	E4991B-810	None	None	USB Keyboard for simplifying word inputs.
Mouse	E4991B-820	None	None	USB Mouse for simplifying measurement operation.
Rackmount Kit	E4991B-1CM	None	None	Not installable simultaneously with E4991B-1CP.
Front Handle Kit	E4991B-1CN	None	None	Not installable simultaneously with E4991B-1CP
Handle/Rack Mount Kit	E4991B-1CP	None	None	Not installable simultaneously with E4991B-1CM or 1CN.

Note: Refer to Hardware Upgrade for retrofit information on the above options.

Step 7. Choose Calibration Certificate Option (If not required, go to step 8)

Description	Option No.	Additional Information
ISO 17025 Compliant Calibration	E4991B-1A7	ISO 17025 compliant calibration with test data.
ANSI Z540 Compliant Calibration	E4991B-A6J	ANSI Z540 compliant calibration.

Step 8. Choose Warranty Plan

3 year Return-to-Agilent warranty and service plan are standard. For extended warranty options and additional information, contact your local Agilent sales office or visit the Agilent home website.

Hardware Upgrade

Option No.	Description	Upgrade Model No. or Equivalent Part Number	Customer Installable	Requires (Instrument must already include the following)	Not Compatible	Additional Information
E4991B-100	Upgrade from 500 MHz to 1 GHz	E4991BU-100	No	E4991B-050	None	Installable at service center only
E4991B-300	Upgrade from 1 GHz to 3 GHz	E4991BU-300	No	E4991B-100	None	Installable at service center only
E4991B-300	Upgrade from 500 MHz to 3 GHz	E4991BU-301	No	E4991B-050	None	Installable at service center only
E4991B-1E5	High Stability Frequency Reference	E4991BU-1E5	No	None	None	Installable at service center only
E4991B-001	DC Bias Source	E4991BU	No	None	None	Installable at service center only
E4991B-007	Temperature Characteristic Test Kit	E4991BU	No	None	None	Installable at service center only
E4991B-010	Probe Station Connection Kit	E4991BU	No	None	None	Installable at service center only
E4991B-1CM	Rackmount Kit	5063-9216	Yes	None	None	
E4991B-1CN	Front Handle Kit	5063-9229	Yes	None	None	
E4991B-1CP	Handle/Rack Mount Kit	5188-4430	Yes	None	None	

Note: For details of the upgrade information, refer to product homepage on the Agilent home website.

Software Upgrade

Option No.	Description	Upgrade Model No. or Equivalent Part Number	Customer Installable	Requires (Instrument must already include the following)	Not Compatible	Additional Information
E4991B-002	Material Measurement Firmware	E4991BU-002	Yes	None (The 16453A or 16454A is required for measure-ment)	None	

Note: For firmware update and upgrade information, refer to product homepage on the Agilent home website.

Available Accessories - Measurement Accessories

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Parallel Electrode SMD Test Fixture	16196A	—	For 1608 (mm) / 0603 (inch) SMD up to 3 GHz
	16196A-710	—	Add Magnifying lens and tweezers
	16196A-ABA	—	U.S. - English localization
	16196A-ABJ	—	Japan - Japanese localization
Parallel Electrode SMD Test Fixture	16196B	—	For 1005 (mm) / 0402 (inch) SMD up to 3 GHz
	16196B-710	—	Add Magnifying lens and tweezers
	16196B-ABA	—	U.S. - English localization
	16196B-ABJ	—	Japan - Japanese localization
Parallel Electrode SMD Test Fixture	16196C	—	For 0603 (mm) / 0201 (inch) SMD up to 3 GHz
	16196C-710	—	Add Magnifying lens and tweezers
	16196C-ABA	—	U.S. - English localization
	16196C-ABJ	—	Japan - Japanese localization
Parallel Electrode SMD Test Fixture	16196D	—	For 0402 (mm) / 01005 (inch) SMD up to 3 GHz
	16196D-710	—	Add Magnifying lens and tweezers
	16196D-ABA	—	U.S. - English localization
	16196D-ABJ	—	Japan - Japanese localization
Bottom Electrode SMD Test Fixture	16197A	—	For SMD from 1005 (mm) / 0402 (inch) to 3225 (mm) / 1210 (inch); up to 3 GHz. Device guides, EIA/EIAJ size shorting bar set, tweezers, wrench, magnifying lens, carrying case and Operation and Service Manual are furnished.
	16197A-001	—	Add 0603 (mm) / 0201 (inch) device guide
	16197A-ABA	—	U.S. - English localization
	16197A-ABJ	—	Japan - Japanese localization
High Temperature Test Fixture	16194A	—	For SMD and leaded device up to 2 GHz, Temperature range: –55 °C to +200 °C. 50 Ω working standard resistors, wrench, tweezers and Operation and Service Manual are furnished.
	16194A-010	—	Add EIA/EIAJ size shorting bar set
	16194A-701	—	Add Shorting bar set; (1 x 1 x 2.4, 1.6 x 2.4 x 2, 3.2 x 2.4 x 2.4, 4.5 x 2.4 x 2.4) mm
SMD Test Fixture	16092A	—	For SMD and leaded device up to 500 MHz. Operation Note is furnished.

Available Accessories - Measurement Accessories (continued)

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Parallel Electrode SMD Test Fixture	16192A	—	For SMD up to 2 GHz. Operation and Service Manual is furnished.
	16192A-010	—	Add EIA/EIAJ size shorting bar set
	16192A-701	—	Add Shorting bar set; (1 x 1 x 2.4, 1.6 x 2.4 x 2, 3.2 x 2.4 x 2.4, 4.5 x 2.4 x 2.4) mm
	16192A-710	—	Add Magnifying lens and tweezers
DC Bias Adapter	16200B	—	External DC bias adapter; 5A max or 40V max, 1 MHz to 1 GHz. Operation and Service Manual is furnished.
	16200B-001	—	Add shorting bars and 51 Ω working standard resistors set; from 0603 (mm) / 0201 (inch) to 3216 (mm) / 1206 (inch)
Dielectric Material Test Fixture	16453A	E4991B-002	For permittivity measurement of dielectric materials up to 1 GHz
Magnetic Material Test Fixture	16454A	E4991B-002	For permeability measurement of magnetic materials up to 1 GHz
USB/GPIB Interface for Windows	82357B	E4991B-007	USB / GPIB interface required for controlling E4991B and ESPEC bench-top temperature chamber by an external PC.

Note: For more detailed information, refer to Accessories Selection Guide for Impedance Measurements.

Available Accessories – for Performance Test and Maintenance

Description	Model Number	Requires (Instrument must already include the following)	Additional Information
Performance Test Kit	16190B	—	7 mm performance test kit; includes Open, Short, 50 Ω Load, Air-line, calibration data, wrench and carrying case.

Note: For details of the performance test kit, refer to product page on the Agilent home website.

Literature Resource

Title	Publication Number
E4991B Data Sheet	5991-3893EN
E4991B Brochure	5991-3892EN
LCR Meters, Impedance Analyzers and Test Fixtures Selection Guide	5952-1430E
Accessories Selection Guide For Impedance Measurements	5965-4792E
Impedance Measurement Handbook	5950-3000

Note: More literature is available on the Agilent home website.

Web Resource

Have Access to the following website to acquire the latest news, product and support information, application literature and more.

www.agilent.com/find/impedance

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A personalized view into the information most relevant to you.

Three-Year Warranty
www.agilent.com/find/ThreeYearWarranty
Beyond product specification, changing the ownership experience. Agilent is the only test and measurement company that offers three-year warranty on all instruments, worldwide

www.agilent.com/quality
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For other unlisted countries:
www.agilent.com/find/contactus
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